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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/704,881	11/02/2000	Richard L. Watkins	4022.000007	4644

7590

02/27/2002

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EXAMINER

MIGGINS, MICHAEL C

ART UNIT	PAPER NUMBER
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1772

DATE MAILED: 02/27/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

SS

Office Action Summary	Application No.		Applicant(s)	
	09/704,881		WATKINS, RICHARD L.	
	Examiner		Art Unit	
	Michael C. Miggins		1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

2. Claims 1 and 5-8 are rejected under 35 U.S.C. 102(e) as being anticipated by Wang et al. (U.S. Patent No. 6,124,007).

Wang et al. teach a method for improving adhesion between two adjacent layers of a laminate membrane, comprising the steps of forming a laminate having a first thermoplastic layer (16, Fig. 5) adjacent a second thermoplastic layer (17, Fig. 5), annealing the laminate, wherein at least one the first and second layers includes a semicrystalline polymeric component (liquid crystal, see column 4, line 16), wherein the laminate is annealed for at least about 15, 30, 40 minutes (see column 7, lines 1-5) (abstract, column 2, lines 18-67, column 6, lines 50-67, column 7, lines 1-5 and Example 9) (applies to instant claims 1, 3 and 5-7).

Although Wang et al. do not specifically teach the step of annealing the laminate at a temperature above a thermal transition temperature of at least one polymeric component of at least one of the layers for a time sufficient for the at least one

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polymeric component to partially diffuse into the adjacent layer, it is the opinion of the examiner that such a limitation is inherent in the teachings of Wang et al. since Wang et al. specifically teaches annealing at 70-100 degrees C for 3 seconds to 3 hours (see column 7, lines 1-5) (applies to instant claims 1 and 8).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wang et al. (U.S. Patent No. 6,124,007) in view of Blonk et al. (U.S. Patent No. 6,082,025).

Wang et al. teach a method for improving adhesion between two adjacent layers of a laminate membrane, comprising the steps of forming a laminate having a first thermoplastic layer (16, Fig. 5) adjacent a second thermoplastic layer (17, Fig. 5), annealing the laminate, wherein at least one the first and second layers includes a semicrystalline polymeric component (liquid crystal, see column 4, line 16), wherein the laminate is annealed for at least about 15, 30, 40 minutes (see column 7, lines 1-5), wherein the laminate is formed into shape by blow molding before the annealing step (see column 6, lines 50-67), wherein the annealing step is carried out at a temperature of at least about 100 degrees C and a ball comprising a bladder and further wherein

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said blow molding step provides a bladder that is sealed and inflated after the annealing step (see column 7, lines 1-5) (abstract, column 2, lines 18-67, column 6, lines 50-67, column 7, lines 1-5 and Example 9) (applies to instant claims 1, 3, 5-8, 10, 16, 20 and 22).

Although Wang et al. do not specifically teach the step of annealing the laminate at a temperature above a thermal transition temperature of at least one polymeric component of at least one of the layers for a time sufficient for the at least one polymeric component to partially diffuse into the adjacent layer, it is the opinion of the examiner that such a limitation is inherent in the teachings of Wang et al. since Wang et al. specifically teaches annealing at 70-100 degrees C for 3 seconds to 3 hours (see column 7, lines 1-5) (applies to instant claims 1 and 8) and it would have been obvious to provide such a step in order to improve the mechanical properties of the laminate and reduce mechanical stress.

Wang et al. teach applicant's invention substantially as claimed. However, Wang et al. fail to disclose a method wherein the first layer is a thermoplastic elastomer layer and the second layer is a thermoplastic polymeric barrier layer, wherein the first layer comprises a thermoplastic polyurethane prepared from a polyester diol and the second layer comprises an ethylene-vinyl alcohol copolymer, further comprising at least a third layer comprising a thermoplastic polyurethane prepared from a polyester diol that is adjacent to the second layer, wherein the first layer comprises a thermoplastic polyurethane prepared from a polyester diol and the second layer comprises an

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ethylene-vinyl alcohol copolymer, and further wherein said blow molding step provides a bladder that is sealed and inflated after the annealing step and a shoe.

Blonk et al. teach a method wherein the first layer is a thermoplastic elastomer layer (32, Fig. 7) and the second layer is a thermoplastic polymeric barrier layer (30, Fig. 7), wherein the first layer comprises a thermoplastic polyurethane prepared from a polyester diol (see column 7, lines 30-67) and the second layer comprises an ethylene-vinyl alcohol copolymer (see column 13, line 4), further comprising at least a third layer (34, Fig. 7) comprising a thermoplastic polyurethane prepared from a polyester diol that is adjacent to the second layer (see column 16, lines 54-67), wherein the first layer comprises a thermoplastic polyurethane prepared from a polyester diol and the second layer comprises an ethylene-vinyl alcohol copolymer and a shoe (Fig. 1) (abstract, columns 4-5, column 7, lines 30-67, column 13, lines 1-15, columns 16-18 and Figs. 1 and 7) (applies to instant claims 4, 18-21 and 27-28) in a method for improving adhesion between two adjacent layers of laminate for the purpose of providing bladders which are elastic and have very low gas transmission rates.

Therefore it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to have provided a method wherein the first layer is a thermoplastic elastomer layer and the second layer is a thermoplastic polymeric barrier layer, wherein the first layer comprises a thermoplastic polyurethane prepared from a polyester diol and the second layer comprises an ethylene-vinyl alcohol copolymer, further comprising at least a third layer comprising a thermoplastic polyurethane prepared from a polyester diol that is adjacent to the second layer,

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wherein the first layer comprises a thermoplastic polyurethane prepared from a polyester diol and the second layer comprises an ethylene-vinyl alcohol copolymer, and further wherein said blow molding step provides a bladder that is sealed and inflated after the annealing step and a shoe in the method of Wang et al. for the purpose of providing a bladder which is elastic and has very low gas transmission rates.

The combined teachings of Wang et al. and Blonk et al. disclose the claimed invention except for the physical properties recited in the claims 2, 9, 11-15, 17, 23-26 and 29 with regards to annealing temperature, time of annealing amount of polyester diol, average molecular weight of diol, glass transition temperature and gas transmission rates. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have employed a method with the physical properties recited in said claims in order to provide improved mechanical properties, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges or an optimum value of a result effective variable involves only routine skill in the art (applies to instant claims 2, 9, 11-15, 17, 23-26 and 29). *In re Aller*, 105 USPQ 233, *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980), *In re Hoeschele*, 406 F.2d 1403, 160 USPQ 809 (CCPA 1969) and *In re Antonie*, 559 F.2d 618, 195 USPQ 6 (CCPA 1977).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Miggins whose telephone number is (703) 305-0915. The examiner can normally be reached on Monday-Friday; 1:30-10:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Pyon Harold can be reached on (703) 308-4251. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7718 for regular communications and (703) 305-3599 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

MCM *[Signature]*
February 22, 2002

[Signature]
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772 2/25/02